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*** YOU HAVE NEW MAIL ***

=> s conductive surface and oligomer?
L1          406 CONDUCTIVE SURFACE AND OLIGOMER?

=> s l1 and hybrid?
L2          122 L1 AND HYBRID?

=> s l2 and double strand? (10a) surface
L3            4 L2 AND DOUBLE STRAND? (10A) SURFACE

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4            4 DUP REM L3 (0 DUPLICATES REMOVED)

=> d l4 bib abs 1-4

L4   ANSWER 1 OF 4  USPATFULL on STN
AN      2005:237444  USPATFULL
TI      Dna conformational switches as sensitive electronic sensors of analytes
IN      Sen, Dipankar, Bumaby, CA, UNITED STATES
        Fahlman, Richard P., Surrey, CA, UNITED STATES
PA      Sen, dipankar (U.S. individual)
PI      US 2005205434      A1   20050922
AI      US 2003-507387     A1   20030311 (10)
        WO 2003-CA330           20030311
                                20050509  PCT 371 date
PRAI    US 2003-60362928    20020311
DT      Utility
FS      APPLICATION
LREP    CHERNOFF, VILHAUER, MCCLUNG & STENZEL, 1600 ODS TOWER, 601 SW SECOND
        AVENUE, PORTLAND, OR, 97204-3157, US
CLMN    Number of Claims: 36
ECL     Exemplary Claim: 1
DRWN    15 Drawing Page(s)
LN.CNT 1450
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      The electrical conductivity of DNA and other oligonucleotide constructs
        is dependent on its conformational state. Such a dependence may be
        harnessed for the electronic sensing of external analytes, for instance,
        adenosine. Such a DNA sensor incorporates an analyte receptor, whose
        altered conformation in the presence of bound analyte switches the
        conformation, and hence, the conductive path between two oligonucleotide
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09/856,543

stems, such as double-helical DNA. Two distinct designs for such sensors are described that permit significant electrical conduction through a first or "detector" double-helical stem only in the presence of the bound analyte. In the first design, current flows through the analyte receptor itself whereas, in the second, current flows in a path adjacent to the receptor. The former design may be especially suitable for certain categories of analytes, including heterocycle-containing compounds such as adenosine, whereas the latter design should be generally applicable to the detection of any molecular analyte, large or small. Since analyte detection in these DNA sensors is electronic, the potential exists for their application in rapid and automated chip-based detection of small molecules as well as of proteins and other macromolecules.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 2 OF 4 USPATFULL on STN
AN 2004:196786 USPATFULL
TI Biosensor, device and method for detecting nucleic acids by means of at least two units for immobilizing nucleic acids
IN Paulus, Christian, Weilheim, GERMANY, FEDERAL REPUBLIC OF
Thewes, Roland, Grobenzell, GERMANY, FEDERAL REPUBLIC OF
Schiente, Meinard, Neubiberg, GERMANY, FEDERAL REPUBLIC OF
PI US 2004152091 A1 20040805
AI US 2004-472074 A1 20040217 (10)
WO 2002-DE867 20020312
PRAI DE 2001-112778 20010316
DT Utility
FS APPLICATION
LREP Jeffery R Stone, Briggs and Morgan, 2200 IDS Center, 80 South Eighth Street, Minneapolis, MN, 55402
CLMN Number of Claims: 22
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 853
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A device and method for detecting nucleic acids. The device having a biosensor with at least two nucleic acid immobilization units and an electrical detection circuit. In the biosensor, the at least two nucleic acid immobilization units are in this case electrically conductive and electrically insulated from one another. The at least two nucleic acid immobilization units are provided with first nucleic acid molecules acting as scavenger molecules. The first nucleic acid molecules are present as single-stranded molecules and can bind second nucleic acid molecules to be detected. The first single-stranded nucleic acid molecules acting as scavenger molecules are provided with a redox-active label capable of generating a detectable signal. The electrical detection circuit is configured in such a way that it detects the **hybridization** even of the nucleic acid molecules with the scavenger molecules by means of the label.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 3 OF 4 USPATFULL on STN
AN 2004:144497 USPATFULL
TI Method for detecting mutations in nucleotide sequences
IN Kappel, Andreas, Konigstein, GERMANY, FEDERAL REPUBLIC OF
Polakowski, Thomas, Berlin, GERMANY, FEDERAL REPUBLIC OF
Pignot, Marc, Ebersbeg, GERMANY, FEDERAL REPUBLIC OF
Windhab, Norbert, Hofheim, GERMANY, FEDERAL REPUBLIC OF
Behrensdorf, Heike, Frankfurt, GERMANY, FEDERAL REPUBLIC OF
Muth, Jochen, Frankfurt, GERMANY, FEDERAL REPUBLIC OF
PI US 2004110161 A1 20040610
AI US 2003-343859 A1 20031124 (10)
WO 2001-EP8127 20010713
PRAI DE 2000-10038237 20000804
DT Utility
FS APPLICATION

LREP O'MELVENY & MEYERS, 114 PACIFICA, SUITE 100, IRVINE, CA, 92618
CLMN Number of Claims: 49
ECL Exemplary Claim: 1
DRWN 18 Drawing Page(s)
LN.CNT 5071
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a method for simultaneously detecting mutations in different nucleotide sequences and for determining the transcription rate of mutated and non-mutated nucleotide sequences. The inventive method comprises the following steps: **hybridizing** single-stranded sample nucleotide sequences to single-stranded reference nucleotide sequences, fixating, before or during **hybridization**, single-stranded reference nucleotide sequences or single-stranded sample nucleotide sequences, or fixating, after or during **hybridization**, heteroduplices from reference and sample nucleotide sequences on an electronically addressable surface, incubating them with a substrate that recognizes heteroduplex mismatches, and detecting the substrate bonds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 4 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2000-411931 [35] WPIDS
DNC C2000-124823
TI Modified nucleic acid **oligomer**, useful for sequencing by **hybridization**, is substituted by redox agent to allow electrical detection of **hybridization**.
DC B04 C07 D16 L02 L03
IN HARTWICH, G; HELLER, A; ADAM, H; GERHARD, H
PA (HART-I) HARTWICH G; (FRIZ-N) FRIZ BIOCHEM GMBH
CYC 88
PI WO 2000031101 A1 20000602 (200035)* GE 49
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
DE 19921940 A1 20000615 (200035)
AU 2000013836 A 20000613 (200043)
DE 19964220 A1 20010419 (200123)
EP 1133514 A1 20010919 (200155) GE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
BR 9915526 A 20011113 (200201)
KR 2001080973 A 20010825 (200215)
CN 1324365 A 20011128 (200219)
MX 2001003985 A1 20010601 (200235)
AU 751220 B 20020808 (200263)
JP 2002532386 W 20021002 (200279) 69
DE 19921940 C2 20030206 (200312)
DE 19964220 C2 20030703 (200345)
ZA 2001003180 A 20030625 (200348) 64
RU 2213095 C2 20030927 (200371)
IN 2002000474 P2 20050624 (200572) EN
ADT WO 2000031101 A1 WO 1999-EP8888 19991119; DE 19921940 A1 DE 1999-1021940 19990429; AU 2000013836 A AU 2000-13836 19991119; DE 19964220 A1 Div ex DE 1999-1021940 19990429, DE 1999-1064220 19990429; EP 1133514 A1 EP 1999-972637 19991119, WO 1999-EP8888 19991119; BR 9915526 A BR 1999-15526 19991119, WO 1999-EP8888 19991119; KR 2001080973 A KR 2001-705877 20010510; CN 1324365 A CN 1999-812448 19991119; MX 2001003985 A1 MX 2001-3985 20010420; AU 751220 B AU 2000-13836 19991119; JP 2002532386 W WO 1999-EP8888 19991119, JP 2000-583928 19991119; DE 19921940 C2 DE 1999-1021940 19990429; DE 19964220 C2 Div ex DE 1999-1021940 19990429, DE 1999-1064220 19990429; ZA 2001003180 A ZA 2001-3180 20010419; RU 2213095 C2 WO 1999-EP8888 19991119, RU 2001-114192 19991119; IN 2002000474 P2 WO 1999-EP8888 19991119, IN 2002-KN474 20010427
FDT AU 2000013836 A Based on WO 2000031101; DE 19964220 A1 Div ex DE 19921940;

EP 1133514 A1 Based on WO 2000031101; BR 9915526 A Based on WO 2000031101; AU 751220 B Previous Publ. AU 2000013836, Based on WO 2000031101; JP 2002532386 W Based on WO 2000031101; DE 19921940 C2 Div in DE 19964220; DE 19964220 C2 Div ex DE 19921940; RU 2213095 C2 Based on WO 2000031101

PRAI DE 1999-19921940 19990429; DE 1998-19853957 19981123

AN 2000-411931 [35] WPIDS

AB WO 200031101 A UPAB: 20000725

NOVELTY - Nucleic acid **oligomer** (I) modified by a redox-active substance (II) that is oxidizable and reducible selectively at a potential (phi) of 2 to -2 V, relative to the standard hydrogen electrode, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a method for producing (I);

(b) a modified **conductive surface** that has one or more types of (I) bound to it;

(c) a method for producing surfaces of (b); and

(d) a method for electrochemical detection of nucleic acid **oligomer hybridization** events, using the surface of (b).

USE - (I) is useful for DNA or RNA sequencing, e.g. in clinical diagnosis, toxicological testing, for research and development in genetics, agriculture and pharmaceuticals.

ADVANTAGE - (I) permits electrical detection of a **hybridization** signal (eliminating the need for fluorophores, radioisotopes etc.), resulting in a simple and inexpensive method for sequence determination. It also opens up the possibility of developing a battery-operated sequencer for use in the field.

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